

REACTION OF ACID LIME SELECTIONS TO CITRUS LEAF MINER INCIDENCE

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ABSTRACT

Studies on leaf miner incidence in 57 promising acid lime selections/genotypes collected from different districts of Western Maharashtra indicated wide range of variation in their susceptibility. Based on mean per cent infestation of leaf miner for two years, no genotype was found immune or resistant. One was found less susceptible, 39 susceptible and 17 highly susceptible. The Sel.124, Sel.49, Sel.107 and Sel.159 had lowest incidence and also possess desirable attributes of high yield and quality traits.

KEY WORDS : Acid Lime, Leaf Miner, Incidence

Citrus crops occupy 49, 805 ha area in Maharashtra of which 6940 ha is under acid lime (Anon., 1990). Leaf miner (*Phyllocnistis citrella* L.) is major pest of citrus which causes serious damage to acid lime crop also. It is more serious on tender leaves of new flushes. To some extent this pest can be suppressed by insecticides, but the practice imposes recurrent cost. Therefore, the best remedy is to identify a suitable resistant genotype. It has been reported in the past that there exists considerable variability in acid lime for various morphological and fruit characters (Siddappa, 1952, Cheema *et al.*, 1954; Swamy *et al.*, 1972; Patil, 1983; Begde and Patil, 1989). This also anticipates variability for other characters such as disease and pest resistance. However, such a study has not been carried out in the past in acid lime genotypes/selections and hence the present study.

MATERIALS AND METHODS

Fifty-seven acid lime selections from various districts of Western Maharashtra were planted in the farm, Department of Horticulture, Mahatma Phule Krishi Vidyapeeth, Rahuri in 1986. For such selection having two plants, each constituting a replication were taken for observation during 1991 and 1992. Incidence was recorded three times a year during January, July and October. Twelve newly emerged shoots were randomly selected from inner as well as outer periphery and the leaves at top 15 cm were observed for leaf miner infestation. The per cent incidence was calculated

and based on the mean of infestation for two years, the selections were categorised as follows :

Damage score	Reaction	Symbol
0.0	Immune	I
1.0 to 5.0	Resistant	R
5.1 to 15.0	Moderately susceptible	MS
15.1 to 25.0	Less susceptible	LS
25.1 to 50	Susceptible	S
Above 50	Highly susceptible	HS

RESULTS AND DISCUSSION

Considerable variability in leaf miner infestation was observed in acid lime genotypes (Table 1). The per cent leaf infestation varied from 16.66 to 67.0 per cent with a mean of 31.24 per cent during 1991 and from 26.96 to 78.67 per cent with 52.02 per cent as population mean during 1992. It ranged from 24.99 to 67.0 per cent with a mean of 41.63 per cent in pooled performance. The incidence of leaf miner during 1992 was higher than during 1991. No selection was found immune resistant or moderately susceptible. However, one selection was less susceptible (Table 1). The selection showing comparatively low incidence in pooled performance were 124 (24.94%), 182 (30.98%), 49 (32.61%), 107 (37.50%), 142 (37.99%), 91 (38.33%) and 159 (38.35%).

Desai *et al.* (1993) have reported the selections 124, 49, 107 and 159 which have recorded low populations of leaf miner infestation also possess desirable attributes of high yield and quality fruits. There are no earlier reports of screening of acid lime selections against leaf miner. The promising

Table 1. Leaf miner incidence on acid lime selections during 1991 and 1992

Selection No.	Leaf miner infestation (%)			Reaction
	1991	1992	Average	
30	41.83	58.91	54.25	S
31	58.45	49.33	53.89	HS
32	36.66	54.99	45.85	S
33	57.80	54.56	50.70	HS
49	28.99	36.22	32.61	S
56	35.00	54.99	44.99	S
68	24.83	63.66	45.74	S
85	34.99	68.33	51.66	HS
89	18.32	60.16	39.24	S
91	16.67	60.00	38.33	S
95	28.33	58.33	43.33	S
96	33.33	68.33	50.83	HS
99	33.33	59.16	46.23	S
107	35.00	42.00	37.50	S
111	23.33	59.16	41.24	S
112	36.67	65.00	50.83	HS
113	18.16	60.00	39.08	S
114	39.99	60.83	50.41	HS
116	46.66	57.49	52.07	HS
119	28.33	60.00	44.16	S
120	31.35	65.83	48.59	S
121	36.66	55.83	46.25	S
122	33.33	55.83	44.58	S
124	16.66	33.33	24.99	LS
125	40.99	60.00	50.49	HS
126	29.99	51.66	40.82	S
127	26.66	53.33	48.74	S
129	43.33	56.65	49.99	S
131	34.99	65.16	49.57	S
132	28.32	63.49	45.90	S
133	29.99	64.16	47.07	S
136	23.33	59.35	41.34	S
138	19.99	58.33	39.16	S
142	19.99	59.16	39.99	S
144	43.33	58.31	50.81	HS
156	39.99	58.33	49.16	S
159	33.33	43.33	38.33	S
170	55.33	78.67	67.00	HS
173	24.99	65.50	45.24	S
175	28.44	60.16	44.30	S
178	33.43	59.16	46.30	S
179	26.67	53.33	40.00	S
182	35.00	26.96	30.98	S
188	33.33	61.66	47.50	S
194	67.00	50.00	58.50	HS
195	45.00	61.66	53.33	HS
196	26.66	53.33	39.99	S

Table 1. Contd.,

Selection No.	Leaf miner infestation (%)			Reaction
	1991	1992	Average	
204	43.33	60.00	51.66	HS
213	49.83	60.83	55.33	HS
214	38.33	56.99	47.66	S
217	36.66	54.16	50.14	HS
219	39.99	66.66	53.30	HS
228	38.33	60.83	49.58	S
230	38.33	39.16	38.74	S
240	48.33	60.00	54.16	HS
242	43.33	31.67	37.50	S
249	29.99	64.16	47.07	S
Population mean	31.24	52.02	41.63	
Range	16.66 to 67.00	26.96 to 78.67	24.99 to 67.00	
S.E. \pm	1.58	4.66	3.98	
C.D. at 5%	4.479	13.271	11.714	

genotypes identified from 57 selections in present investigation are the Sel.124, Sel.182, Sel.49, Sel.107, Sel.142, Sel.91 and Sel.159.

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